What is claimed is:

1. An optical component comprising:

an optical fiber comprising a core that comprises a distal portion that terminates at a flat end,

the distal portion of the fiber extending through and beyond a ferrule so that the flat end at the core is disposed beyond the ferrule,

the flat end of the core being coated with an annular layer of metal, leaving a central portion of the core uncovered,

a back-illuminated photodiode comprising a front side and a back side, the back side comprising a metal surface with an aperture disposed therein,

the flat end of the core being bonded to the back side of the photodiode so that the annular layer of metal encircles the aperture and is metallically bonded to the metal surface of the photodiode with the uncovered central portion of the core in alignment with the aperture.

2. The optical component of claim 1 wherein the annular metal layer and metal surface of the back side of the photodiode are reflowed together to bond the fiber to the photodiode.

3. The optical component of claim 1 wherein the front side of the photodiode comprises and anode and a cathode.

4. The optical component of claim 1 wherein the front side of the photodiode is mounted on a first side of a substrate, the substrate comprising a second side that is connected to a transimpedance amplifier (TIA), the TIA and photodiode being electrically connected.

5. The optical component of claim 5 wherein the substrate comprises printed electrical connection lines for connecting the TIA to the photodiode.

6. The optical component of claim 1 wherein an outer surface of the distal portion of the core is metallized from the flat end up to the ferrule.

7. The optical component of claim 1 wherein the optical component is a transponder or a transceiver.

8. A method of fabricating an optical component comprising:

coating a flat end of a core of an optical fiber with an annular coating of metal leaving a central portion of the cover uncovered,

aligning and engaging the flat metallized end of the core with a back side of a back-illuminated photodiode that comprises a metal surface with an aperture disposed therein for the reception of light so that the uncovered central portion of the core is in alignment with the aperture,

at least partially melting the annular coating of metal of the flat end of the fiber and the metal surface of the back side of the photodiode to bond the metal surface of the photodiode to the flat end of the core with the uncovered central portion of the core in alignment with the aperture.

9. The method of claim 8 wherein the at least partially melting is achieved by reflowing the annular metal layer of the core and the metal layer on the rear side of the photodiode.

10. The method of claim 8 wherein the front side of the photodiode comprises and anode and a cathode.

11. The method of claim 8 wherein the front side of the photodiode is mounted on a first side of a substrate, the substrate comprising a second side that is connected to a transimpedance amplifier (TIA), the TIA and photodiode being electrically connected.

12. The method of claim 11 wherein the substrate comprises printed electrical connection lines for connecting the TIA to the photodiode.

13. The method of claim 8 wherein the coating further comprises coating an outer surface of the distal portion of the core from the flat end up to a point where the core extends out of a ferrule.

14. The method of claim 8 wherein the optical component is a transponder or a transceiver.

15. An optical component comprising:

an optical fiber comprising a core comprising a distal portion that terminates at a flat end,

the distal portion of the core extending through and beyond a ferrule so that the flat end is disposed beyond the ferrule with a section of exposed core disposed between the ferrule and the flat end of the core,

the flat end of the core being coated with an annular layer of metal leaving a central portion of the flat end of the core uncovered and the coating extending over an outer surface of the section of exposed core,

a back-illuminated photodiode comprising a front side and a back side, the back side comprising a metal surface with an aperture disposed therein for the reception of light,

the flat end of the core being bonded to the back side of the photodiode so that the annular layer of metal encircles the aperture and is metallically bonded to the metal surface of the photodiode with the uncovered central portion of the flat end of the core in alignment with the aperture.

16. The optical component of claim 15 wherein the metal layer coated onto the fiber and metal surface of the back side of the photodiode are reflowed together to metallically bond the fiber to the photodiode.

17. The optical component of claim 15 wherein the front side of the photodiode comprises and anode and a cathode.

18. The optical component of claim 15 wherein the front side of the photodiode is mounted on a first side of a substrate, the substrate comprising a second side that is connected to a transimpedance amplifier (TIA), the TIA and photodiode being electrically connected.

19. The optical component of claim 18 wherein the substrate comprises printed electrical connection lines for connecting the TIA to the photodiode.

20. The optical component of claim 18 wherein the optical component is a transponder or a transceiver.